



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,453	07/02/2008	Markus Kampmann	P19151-US1	1327
27045	7590	12/23/2009	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			MASUR, PAUL H	
			ART UNIT	PAPER NUMBER
			2464	
			MAIL DATE	DELIVERY MODE
			12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,453	Applicant(s) KAMPMANN ET AL.	
	Examiner Paul Masur	Art Unit 2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 37-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 13, 15, 17-25, 28, 30, 31, 35 and 36 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 11, 12, 14-16, 26, 27, 29 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-07, 10, 13, 17-25, 28-31, and 34-36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claims 2-8 and 10-17 are objected to because of the following informalities: the claim contains optional claim language. The examiner kindly refers the applicant to MPEP § 2106. According to the MPEP, "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation." The MPEP states that the clause "adapted to" is an example of claim language that suggests a claim limitation is optional.

Appropriate correction is required.

3. Claim 20 is objected to because of the following informalities: because the claim contains a typo. In line two, it is assumed by the examiner, the applicant meant to claim "...of a plurality of data elements". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

Art Unit: 2464

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 13, 18-21, 31, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Echigo et al. (US PG Pub 2003/0217091, which was cited on an IDS dated 07/26/2006).

6. As per claim 1, Echigo et al. teach a transmission device for prioritising data elements of a data stream for transmission to a receiving device, comprising:

decodability determining means for determining a decodability of a current data element, the decodability indicating the extent to which the current data element is decodable at the receiving device [Echigo, paragraph 0025, “Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames”, Content can be coded using different formats.];

prioritising means for assigning a priority to the current data element based on the determined decidability [Echigo, paragraph 0025, “a network system comprising a contents provider that provides contents and a client that acquires the contents, wherein: the contents provider attaches information on communication priorities to the

Art Unit: 2464

contents based on importance which is determined from the meaning of the contents”,
Priorities are attached to the information based on the importance of the contents.]; and

a transmitter controller for scheduling a transmission of the current data element to the receiving device based on the priority [Echigo, paragraph 0025, “sends the contents to the client using a protocol which controls quality of service based on the priorities; and the client receives the contents transmitted by the contents provider”, Quality of service controls the scheduling of transmission and reception of the data, based on priority.].

7. **As per claim 2**, Echigo et al. teach the transmission device of claim 1. Echigo et al. also teach wherein the decodability determining means is adapted to determine the decodability of the current data element using information on which of a plurality of data elements were transmitted to the receiving device [Echigo, paragraph 0025, “Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames”, Content can be coded using different formats.].

8. **As per claim 3**, Echigo et al. teach the transmission device of claim 1. Echigo et al. also teach wherein the decodability determining means is adapted to receive a feedback from the receiving device indicating which of the data elements were received

Art Unit: 2464

error free [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

9. **As per claim 13**, Echigo et al. teach the transmission device of claim 1. Echigo et al. also teach wherein the transmitter controller is adapted to estimate the probability of an error-free transmission over a transmission channel [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

10. **As per claim 18**, Echigo et al. teach the transmission device of claim 1. Echigo et al. also teach wherein the data stream is a video stream and motion compensation is disregarded [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this

Art Unit: 2464

embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames”, Content can be coded using different formats.].

11. **As per claim 19**, Echigo et al. teach a method for prioritising data elements of a data stream for transmission to a receiving device, comprising:

determining a decodability of a current data element, the decodability indicating the extent to which the current data element is decodable at the receiving device [Echigo, paragraph 0025, “Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames”, Content can be coded using different formats.];

assigning a priority to the current data element based on the determined decodability [Echigo, paragraph 0025, “a network system comprising a contents provider that provides contents and a client that acquires the contents, wherein: the contents provider attaches information on communication priorities to the contents based on

importance which is determined from the meaning of the contents”, Priorities are attached to the information based on the importance of the contents.]; and

scheduling a transmission of the current data element to the receiving device based on the priority [Echigo, paragraph 0025, “sends the contents to the client using a protocol which controls quality of service based on the priorities; and the client receives the contents transmitted by the contents provider”, Quality of service controls the scheduling of transmission and reception of the data, based on priority.].

12. **As per claim 20**, Echigo et al. teach the method of claim 19. Echigo et al. also teach including determining the decodability of the current data element using information on which of a plurality of data elements were transmitted to the receiving device [Echigo, paragraph 0025, “Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames”, Content can be coded using different formats.].

13. **As per claim 21**, Echigo et al. teach the method of claim 19. Echigo et al. also teach including receiving a feedback from the receiving device indicating which of the data elements were received error free [Echigo, paragraph 0025, “Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are

Art Unit: 2464

used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

14. **As per claim 31**, Echigo et al. teach the method of claim 19. Echigo et al. also teach including estimating the probability of an error-free transmission over a transmission channel [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

15. **As per claim 36**, Echigo et al. teach the method of claim 19. Echigo et al. also teach wherein the data stream is a video stream and motion compensation is disregarded [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically

Art Unit: 2464

and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 4-7, 10, 17, 22-25, 28, 30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Echigo et al. (US PG Pub 2003/0217091, which was cited on an IDS dated 07/26/2006) in view of Kimoto (US PG Pub 2002/0094028).

18. As per claim 4, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein the decodability determining means is adapted to, if the current data element requires a reference data element for being fully decodable at the receiving device, the set decodability of the current data element equal to the decodability of the reference data element, when the reference data element has been transmitted.

However, Kimoto teaches wherein the decodability determining means is adapted to, if the current data element requires a reference data element for being fully decodable at the receiving device, the set decodability of the current data element equal to the decodability of the reference data element, when the reference data element has

Art Unit: 2464

been transmitted [Kimoto, paragraph 0006, "The reference image 102 is supplied from the block encoding section 18 as a decoded image of a previous frame", The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

19. **As per claim 5**, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein the decodability determining means is adapted to, if the current data element requires multiple reference data elements for being fully decodable at the receiving device, determining the decodability of the current data element based on the decodabilities of the reference data elements.

However, Kimoto teaches wherein the decodability determining means is adapted to, if the current data element requires multiple reference data elements for being fully decodable at the receiving device, determining the decodability of the current data element based on the decodabilities of the reference data elements [Kimoto, fig. 4A, paragraph 0065, "FIG. 4A is a schematic diagram showing an example of a process for complementing the current frame with lost data. In the example of FIG. 4A, transmission error is assumed to have occurred to coded data of blocks of the current frame. Lost data (pixel values) of the blocks of the current frame are complemented by

Art Unit: 2464

directly copying pixel values from corresponding blocks of the reference image (reference frame) at the same positions as the blocks of the current frame”, Multiple references are used.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

20. **As per claim 6**, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein the decodability determining means is adapted to recalculate the decodability of at least a portion of the data elements upon transmission of the current data element.

However, Kimoto teaches wherein the decodability determining means is adapted to recalculate the decodability of at least a portion of the data elements upon transmission of the current data element [Kimoto, paragraph 0006, “The reference image 102 is supplied from the block encoding section 18 as a decoded image of a previous frame”, The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding

Art Unit: 2464

such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

21. **As per claim 7**, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein, upon transmission of the current data element, the decodability determining means is adapted to recalculate a decodability of data elements indicated in a decoding dependency record of the current data element, the decoding dependency record indicating all data elements requiring the current data element for decoding.

However, Kimoto teaches wherein, upon transmission of the current data element, the decodability determining means is adapted to recalculate a decodability of data elements indicated in a decoding dependency record of the current data element, the decoding dependency record indicating all data elements requiring the current data element for decoding [Kimoto, paragraph 0008, The encoding is recalculated from the synchronization, which is estimated based on error.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

22. **As per claim 10**, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein the decodability determining means is adapted to: determine

Art Unit: 2464

an average decodability of a number of data elements; determine a decodability increase of the average decodability of the number of data elements obtainable by transmitting the current data element; and determine the priority of the current data element based on the decodability increase.

However, Kimoto teaches determine an average decodability of a number of data elements [Kimoto, paragraph 0023, "The degradation estimation calculation means obtains the degradation estimation in the case of the inter-frame prediction encoding by obtaining the product of the degradation power and the data loss probability, obtaining a degradation propagation term as a weighted average of degradation estimations of blocks overlapping with a referred area of the reference image which is referred to for a motion compensation process in the inter-frame prediction encoding, and adding the degradation propagation term to the product", The decoding after reception is based on the weighted average of the degraded signals.];

determine a decodability increase of the average decodability of the number of data elements obtainable by transmitting the current data element [Kimoto, paragraph 0008, The encoding is recalculated from the synchronization using a counter, which is estimated based on error.]; and

determine the priority of the current data element based on the decodability increase [Kimoto, paragraph 0011, Priority is determined based on the detailed degradation calculations and their affect on the decoding at reception.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since

Art Unit: 2464

Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

23. **As per claim 17**, Echigo et al. teach the transmission device of claim 1. Echigo et al. do not teach wherein the decodability determining means is adapted to set the decodability of the reference data element equal the decodability of a data frame containing the reference data element.

However, Kimoto teaches wherein the decodability determining means is adapted to set the decodability of the reference data element equal the decodability of a data frame containing the reference data element [Kimoto, paragraph 0006, "The reference image 102 is supplied from the block encoding section 18 as a decoded image of a previous frame", The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

24. **As per claim 22**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach wherein, if the current data element requires a reference data element for being

Art Unit: 2464

fully decodable at the receiving device, the decodability of the current data element is set equal to the decodability of the reference data element, when the reference data element has been transmitted.

However, Kimoto teaches wherein, if the current data element requires a reference data element for being fully decodable at the receiving device, the decodability of the current data element is set equal to the decodability of the reference data element, when the reference data element has been transmitted [Kimoto, paragraph 0006, "The reference image 102 is supplied from the block encoding section 18 as a decoded image of a previous frame", The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

25. **As per claim 23**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach wherein, if the current data element requires multiple reference data elements for being fully decodable at the receiving device, the decodability of the current data element is determined based on the decodabilities of the reference data elements [Kimoto, fig. 4A, paragraph 0065, "FIG. 4A is a schematic diagram showing an example of a process for complementing the current frame with lost data. In the example of FIG.

Art Unit: 2464

4A, transmission error is assumed to have occurred to coded data of blocks of the current frame. Lost data (pixel values) of the blocks of the current frame are complemented by directly copying pixel values from corresponding blocks of the reference image (reference frame) at the same positions as the blocks of the current frame”, Multiple references are used.].

However, Kimoto teaches wherein, if the current data element requires multiple reference data elements for being fully decodable at the receiving device, the decodability of the current data element is determined based on the decodabilities of the reference data elements.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

26. **As per claim 24**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach including recalculating the decodability of at least a portion of the data elements upon transmission of the current data element.

However, Kimoto teaches including recalculating the decodability of at least a portion of the data elements upon transmission of the current data element [Kimoto, paragraph 0006, “The reference image 102 is supplied from the block encoding section

Art Unit: 2464

18 as a decoded image of a previous frame”, The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

27. **As per claim 25**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach including, upon transmission of the current data element, recalculating a decodability of data elements indicated in a decoding dependency record of the current data element, the decoding dependency record indicating all data elements requiring the current data element for decoding.

However, Kimoto teaches including, upon transmission of the current data element, recalculating a decodability of data elements indicated in a decoding dependency record of the current data element, the decoding dependency record indicating all data elements requiring the current data element for decoding [Kimoto, paragraph 0008, The encoding is recalculated from the synchronization, which is estimated based on error.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying

Art Unit: 2464

encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

28. **As per claim 28**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach including determining an average decodability of a number of data elements; determining a decodability increase of the average decodability of the number of data elements obtainable by transmitting the current data element; and determining the priority of the current data element based on the decodability increase.

However, Kimoto teaches determining an average decodability of a number of data elements [Kimoto, paragraph 0023, "The degradation estimation calculation means obtains the degradation estimation in the case of the inter-frame prediction encoding by obtaining the product of the degradation power and the data loss probability, obtaining a degradation propagation term as a weighted average of degradation estimations of blocks overlapping with a referred area of the reference image which is referred to for a motion compensation process in the inter-frame prediction encoding, and adding the degradation propagation term to the product", The decoding after reception is based on the weighted average of the degraded signals.];

determining a decodability increase of the average decodability of the number of data elements obtainable by transmitting the current data element [Kimoto, paragraph 0008, The encoding is recalculated from the synchronization using a counter, which is estimated based on error.]; and

determining the priority of the current data element based on the decodability increase [Kimoto, paragraph 0011, Priority is determined based on the detailed degradation calculations and their affect on the decoding at reception.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

29. **As per claim 30**, Echigo et al. in view of Kimoto teach the method of claim 28. Echigo et al. also teach wherein the number of data elements represents data elements of a predetermined time window of the data stream or of the entire data stream [Echigo, paragraph 0025, "Regarding data file formats of contents, MPEG-4 Video (Simple Profile) format and MP4 file format are used according to this embodiment. MPEG-4 Video (Simple Profile) is encoded into two types of frame: an I (Intra coded) frame and P (Predictive coded) frame. I-frames are arranged periodically and used as starting points for random access or error recovery. They are encoded independently of other frames instead of using predictive coding. P-frames are predictively coded with reference to past I- or P-frames", Content can be coded using different formats.].

30. **As per claim 35**, Echigo et al. teach the method of claim 19. Echigo et al. do not teach including setting the decodability of the reference data element equal the decodability of a data frame containing the reference data element.

However, Kimoto teaches including setting the decodability of the reference data element equal the decodability of a data frame containing the reference data element [Kimoto, paragraph 0006, "The reference image 102 is supplied from the block encoding section 18 as a decoded image of a previous frame", The reference is encoded the same way as the current data.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kimoto into Echigo et al., since Echigo et al. suggest a content providing system through the use of frames of varying encoding levels and priorities, and Kimoto suggests the beneficial use of video encoding such as to reduce video degradation in a transmission system [Kimoto, paragraph 0001] in the analogous art of frame encoding.

Allowable Subject Matter

31. Claims 8, 9, 11, 12, 14-16, 26, 27, 29, and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

32. The Examiner has cited particular columns and line numbers or paragraphs in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing

Art Unit: 2464

responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, the Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

33. If the Applicant is of the opinion that an interview would help advance prosecution in this case, they are welcome to call the Examiner, Paul Masur, at the number listed below to schedule an interview. The Examiner prefers interview requests be accompanied with a detailed agenda via fax. The Examiner's fax number is (571) 270-8297. The Examiner is willing to consider proposed amendments, clarify rejections, and discuss any other issues that are presented by the Applicant. Please note that the Examiner may not be able to accommodate all requests due to scheduling constraints. It is recommended that interview requests be sent with ample time to schedule an interview.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Masur whose telephone number is (571) 270-7297. The examiner can normally be reached on Monday through Friday from 7:00AM to 4:30PM (Eastern Time).

Art Unit: 2464

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2464

/P. M./
Examiner, Art Unit 2464